DOCUMENT RESUME

ED 122 495 EC 082 873

AUTHOR Branston, Mary Beth
TITLE The Use of Language Sampling as a Means of Assessing Early Productive Language.
PUB DATE Apr 76
NOTE 18p.; Paper presented at the Annual International Convention, The Council for Exceptional Children (54th, Chicago, Illinois, April 4-9, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Early Childhood Education; *Evaluation Methods; Exceptional Child Education; *Handicapped Children; Infancy; *Language Development; *Language Patterns; Maturation

ABSTRACT

Semantic-cognitive language sampling procedures to assess language development are used at the Kennedy Center Experimental School which serves handicapped children from 3 months to 6 years of age. A half hour of natural language is transcribed with a written description of the context. Fifty consecutive sentences or 100 utterances are selected and analyzed for grammatical forms such as personal pronouns, main verbs, and negatives. Sentences and utterances are also assessed for semantic functions such as vocabulary content and appropriate word order. The mean length of utterance in words is computed, and the relative numbers of single words, two-word combinations, and three or more word constructions are calculated. (DB)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED122495

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

The Use of Language Sampling as a Means of Assessing Early Productive Language

Mary Beth Branston, M.A.
Kennedy Center Experimental School
George Peabody College

EC082873

Paper to be presented at Council for Exceptional Children Convention, Chicago, April, 1976.

The Use of Language Sampling as a Means of
Assessing Early Productive Language

It does not occur to most educators or even to most parents to question how a child learns to talk. For the normal child, language learning appears to take place automatically, without effort and, it seems, without teaching. Perhaps this is why the presence of a significant language delay in a child presents so many problems for educational programming. As communities across the country begin to accept responsibility for the education of children who are different from normal children, school systems find themselves charged with providing services for just such children with considerable language delays.

At the same time, recent research in the fields of psychology and psycholinguistics has been rapidly advancing knowledge of the processess involved in early language learning. The semantic-cognitive view of early language development has facilitated the search for information on the very beginnings of communicative behavior - information that is particularly important to those working with populations of exceptional children. Unfortunately there is quite a time lag between research advances and corresponding advances in programming for children. This paper will present one program's initial attempts to translate current theory and research into assessment procedures for programming.

Literature Review

The study of language development has been approached from rather diverse schools of thought. In the sixties, psycholinguists subscribing to

transformational grammar (Chomsky, 1957) eventually arrived at the conclusion that language is so complex and environment so unorderly that the ability to acquire language must be innate (Chomsky, 1968; McNeill, 1971). On the other hand, behaviorists following the lead of Skinnerian thought (1957) described language as the result of a history of positive reinforcement in addition to the conditioning of appropriate discriminative stimulus control (Guess, 1969; Baer & Guess, 1973; Staats, 1974). In the midst of these polars, there emerged from the study of semantic theory and case grammar (Katz & Fodor, 1963; Katz and Postal, 1964; Fillmore, 1968) a semantic view of language acquisition which considered as primary the meaning and communicative intent of child utterances.

The work of Lois Bloom (1970) marked the beginning of the application of semantic analysis to child language. Bloom incorporated into her recordings of child utterances, descriptions of the context in which these utterances took place, including both adult language and environmental situations. This enabled her to study child language from the framework of meaning and intent and led her to propose that language "maps" a child's knowledge of the world. Concomitant work by Schlesinger (1971) and Brown (1973) advanced the study of semantic intent in child language. Brown applied the use of case grammar to the analysis of early language, while Schlesinger proposed an entirely semantic base for early utterances.

The emphasis on meaning in early language has highlighted the importance of cognitive development to language acquisition. Work by Slobin (1971) and Bowerman (1973) indicated that language reflects certain "universals" of development even across different language cultures. If language maps early knowledge, and this knowledge has certain universal characteristics, informa-

tion about the nature of the knowledge base should certainly lend much to the study of language acquisition. Many investigators (Brown, 1973; Sinclair DeZwart, 1969, 1970, 1971, 1973; Morehead & Morehead, 1974) have suggested that the knowledge expressed by early child language originates in the sensorimotor developments of the normal child's first 24 months as described by Jean Piaget (1952, 1954, 1962). A rather striking isomorphism is apparent between Piaget's descriptions of intellectual development and the semantic categories identified in later language. For example, both involve the existence, nonexistence, and recurrence of objects, the location of objects in space, actions upon objects, and people as performers of actions. Other researchers (Nelson, 1973, 1974; Clark, 1973, 1974), focusing on conceptual and perceptual features of words, have further detailed the nature of the early concepts that underline children's first words. Evidence is accumulating that these early concepts are based on perceptual information from the environment and are particularly influenced by dynamic, action-oriented, perceptual events. It is also becoming apparent that these early concepts are themselves dynamic and constantly changing as new information is integrated by the child.

As can be seen, the semantic-cognitive approach to language acquisition can provide the perspective from which the content and sequence for language programming can be developed for both very young and severely-delayed children. Unfortunately, intervention techinques in service programs are lagging behind advances in theory and research. A very small number of programs across the country are in the process of incorporating current research into language training programs, and these are mainly university-based experimental programs (Miller & Yoder, 1974; MacDonald, 1975).

Overview of the Program

The Kennedy Center Experimental School located at Peabody College is an early intervention program serving children from 3 months to 6 years of age. The program has a rich history of research in language intervention (Bricker and Bricker, 1971, 1972, 1973), and under the present direction of Dr. James E. McLean, innovations in language training have continued to be a priority.

The age-range of the population of the Experimental School necessitates programming from the beginnings of communication through later syntactic and grammatical development. The selection and sequencing of curriculum content follows a strongly developmental orientation. Programming for early language levels incorporates principles from the semantic-cognitive literature on the beginnings of language acquisition. This provides the basis for later programming components which are derived from the structural orientation of Laura Lee (1974. 1975) and from the logical/conceptual orientation of Bereiter and Engelmann (1966).

The technology of programming in the Experimental School is influenced by an ecological perspective. Various language training programs have noted the need for generalization of training to the child's natural environment (Miller & Yoder, 1974; MacDonald, 1975; Guess, Sailor & Baer, 1974). To facilitate generalization, two provisions are made: 1) an attempt is made to keep programming consonant with the child's normal enviornment by selecting functional targets for training and by incorporating significant adults into the training procedures; 2) provision for generalization is made within the training procedures. All language training takes place in naturalistic settings within the classrooms. A child may be individually taught a particular

response, but he will also encounter the need to use that response in a group play situation or in a classroom routine such as snack time or music. These procedures, coupled with the careful selection of appropriate targets the planned arrangement of environmental stimuli, and the use of reinforcement or response support contingencies, are designed to promote the development of functional and generative language.

Assessment

Traditionally, psycho-educational assessment has entailed the use of standardized tests or criterion-referenced tests for determining appropriate educational placement, prescribing programming approaches, or measuring the effects of particular intervention strategies. With children at very early levels of development, the use of developmental scales has been more common. Such scales have been applied from both an informant and an elicited behavior format. More recently, however, proponents of psychological ecology have been advocating the use of behavior observation in a naturalistic setting as a more powerful and complete means of assessment (Baldwin & Baldwin, 1973; Miller, 1974). Observing children in natural settings affords a clearer picture of typical behaviors and response modes - something that testing in an unfamiliar setting with an unfamiliar adult will not allow. Especially for those children whose behavior is not under predictable control, the use of naturalistic observation provides an alternative to the structured testing situation. Naturalistic observation therefore, seems particularly appropriate for children at early levels of development.

The process of language sampling is one form of naturalistic observation which focuses on language behavior. Several techniques for recording and analyzing samples are available (Miller, 1974). Most of these are primarily

concerned with syntactic and grammatical aspects of lanaguage; although, MacDonald and his associates at Ohio State Universtiy have developed sampling procedures which analyze semantic aspects of emerging language (MacDonald & Nickols, 1974). At the Kennedy Center Experimental School, language sampling is the primary means of assessment of expressive language. It is used as a child enters the program to determine an appropriate entrance into intervention, and it is used periodically in conjunction with daily classroom data to measure developmental gains.

Sampling Productive Language

The procedures for collecting a corpus of child utterances are rather standard. At the Kennedy Center, a home-like room which is wired with a microphone is the site for most samples. The child and an adult (preferably a significant adult such as a parent or teacher) are taken to the room and asked to play for half an hour. Specified toys are available depending on the child's level of development. For younger children, infant and toddler toys (babies, dishes, a ball, a hat and shoes for dress up, a stuffed dog, a telephone, a toy car, and a bucket with blocks inside) are available on the shelf. For older children, preschool toys (a doll house with doll family and furniture, a car-carrier truck, a barn with animals, and a series of situation pictures) are available. Materials have been standardized for research purposes; in a purely applied situation allowances could be made for including any known favorite toys. The adult is instructed to interact normally with the child, stimulating language only if necessary. This is rarely needed. The combination of having an adult, a room, and a group of toys without having to share them, is an unbeatable one for most children.

A transcriber observes the half-hour session and later goes back over the tape recoring to obtain as exact a transcription as possible. Child utterances are recorded with accompanying situational and language context. Procedures for transcription outlined by Lee (1974) and Bloom, Lightbown & Hood (1973) are followed. It is often useful for the parent or teacher to review the transcript and "translate" particular words that may otherwise be missed.

Once the corpus of utterances with accompanying context is complete, one of three forms of analysis is applied. The most advanced of these is Developmental Sentence Scoring (DSS) developed by Lee (1974). Fifty consecutive sentences reflecting both subject and predicate are selected from the corpus. Each sentence is scored according to developmental level for eight categories of grammatical forms: indefinite pronoun and noun modifiers, personal pronouns, main verbs, secondary verbs, negatives, conjunctions, interrogative reversals, and Wh questions. If the sentence is grammatically correct, an additional point is awarded. The average score for all 50 sentences is compared with the scores of 200 Standard English speaking children to determine the presence and degree of language delay or deviance. The analysis of sentences also indicates specific programming needs.

If it is not possible to obtain 50 sentences from a corpus, two other methods of analysis are available. Lee (1974) has developed a procedure called Developmental Sentence Types (DST) which requires 100 utterances, but not necessarily complete sentences. These can be recorded on a chart which is laid out according to the number of words used (one, two, or three word constructions) across the grammatical categories of noun, designator, descrip-

tive item, verb, and vocabulary item. Basic sentence elaborations and modifications are also designated. DST does not provide a score, but does assist intervention planning and will demonstrate progress by a comparison of repeated samplings.

Niether DSS nor DST provide information relative to the semantic aspects of early language development. To aid in assessment of semantic categories, a procedure was developed for use at the Kennedy Center Experimental School that allows the charting of semantic functions and relations. Each different utterance from the language sample corpus is analyzed according to semantic intent and according to form (number of words).

Insert Table 1 about here

The utterance is then charted on the forms presented in tables two and three.

Insert Table 2 about here

Insert Table 3 about here

From these forms, it is possible to assess vocabulary content, variety and frequency of semantic relations used, and use of appropriate word order. This allows selection of target lexicon and structure, as well as contexts in which language teaching should occur. In this process of assessment, the child's

current language can be inventoried and compared with reports of normally developing semantic and functional categories. Teaching can then be directed toward target lexicon, meanings, and functions which are absent from a child's current repertoire.

Two numerical measures are obtained in addition to the charting of utterances. The mean length of utterance (MLU) in words is computed, and the relative numbers of single words, two-word combinations, and three or more word constructions is computed. This is similar to the procedure used by Lee in DST (1974). Both of these measures provide an indication of developmental level and of progress over repeated samplings.

The use of language sampling to assess expressive language of children at early levels of language development provides an alternative to traditional methods of language assessment. This procedure is not only more appropriate for the population of concern, but it also provides a more exact description of level of language functioning. With continued use and refinement, procedures of language sampling, and of naturalistic observation in general, should prove to be powerful tools for those charged with assessment and program planning for young and severely involved children.

References

Baer, D. M. & Guess, D. Teaching productive noun suffixes to severely retarded children. American Journal of Mental Deficiency, 1973, 77, 498-505.

Baldwin, A. & Baldwin, C. The study of mother-child interaction. American Scientist, 1973, 61, 714-721.

Bereiter, C. & Engelmann, S. Teaching disadvantaged children in the preschool. Englewood Cliffs, N.J.: Prentice-Hall, 1966.

Bloom, L. Language development: Form and function in emerging grammars. Cambridge: M.I.T. Press, 1970.

Bloom, L., Lightbown, P. & Hood, L. Conventions for transcription of child language recordings. Unpublished manuscript, Teachers College, Columbia University, 1973.

Bowerman, M. Early syntactic development: A cross-linguistic study with special reference to Finnish. London: Cambridge University Press, 1973.

Bricker, D. D. & Bricker, W. A. Toddler research and intervention project report: Year 1. IMRID Behavioral Science Monograph No. 20, Institute on Mental Retardation and Intellectual Development, George Peabody College, Nashville, 1972.

Bricker, D. D. & Bricker, W. A. Toddler research and intervention project report: Year II. IMRID Behavioral Science Monograph No. 21. Institute on Mental Retardation and Intellectural Development, George Peabody College, Nashville, 1972.

Bricker, D. D. & Bricker, W. A. Infant, toddler, and preschool research and intervention project report: Year III. IMRID Behavioral Science Monograph No. 23. Institute on Mental Retardation and Intellectual

Development, George Peabcdy College, Nashville, 1973.

Brown, R. A first language: The early stages. Cambridge: Harvard University Press, 1973.

Chomsky, N. Syntactic structures. The Hague:Mouton, 1957.

Chomsky, N. Language and mind. New York: Harcourt Brace Jovanovich, 1968.

Clark, E. What's in a word? On the child's acquisition of semantics in his first language. In T. E. Moore (Ed.) Cognitive development and the acquisition of language. New York: Academic Press, 1973.

Clark, E. Some aspects of the conceptual basis for first language acquisition. In R. L. Schiefelbusch and L. L. Lloyd (Eds.) Language perspectives: Acquisition, retardation and intervention. Baltimore: University Park Press, 1974.

Fillmore, C. The case for case. In E. Bach and R. T. Harms (Eds.) Universals in linguistic theory. New York: Holt, Rinehart & Winston, 1968.

Guess, D. A functional analysis of receptive language and productive speech. Journal of Applied Behavior Analysis, 1969, 2, 55-64.

Guess, D., Sailor, W. & Baer, D. To teach language to retarded children. In R. Schlefelbusch and L. Lloyd (Eds.) Language perspectives: Acquisition, retardation, and intervention. Baltimore: University Park Press, 1974.

Katz, J. & Fodor, J. The structure of a semantic theory. Language, 1963, 39, 170-210.

Katz, J. & Postal, P. An integrated theory of linguistic descriptions. Cambridge, Mass.: M.I.T. Press, 1964.

Lee, L. Developmental sentence analysis. Evanston, Ill.: Northwestern University Press, 1974.

Lee, L. Interactive language development teaching. Evanston, Ill.: Northwestern University Press, 1975.

MacDonald, J. & Nickols, M. Environmental language inventory. Columbus, Ohio: Ohio State University, Nisonger Center, 1974.

MacDonald, J. Environmental Language Intervention: Programs for establishing initial communication in handicapped children. In F. Withrow and C. Nygren, Language and the handicapped learner: Curricula, Programs, and Media. Columbus, Merrill Publishing Co., 1975.

MacNeill, D. The capacity for the ontogenesis of grammar. In D. I . Slobin (Ed.) The ontogenesis of grammar. New York: Academic Press, 1971.

Miller, J. A developmental approach toward assessing communication behavior in children. First draft, Madison, Wisc.: Waisman Center on Mental Retardation and Human Development, University of Wisconsin, 1974.

Miller, J. & Yoder, D. E. Ontongenetic language teaching strategy for retarded children. In R. L. Schiefelbusch and L. Lloyd (Eds.) Language perspectives: Acquistion, retardation and intervention. Baltimore: University Park Press, 1974.

Morehand, D. M. & Morehead, A. A Piagetian view of thought and language during the first two years. In R. L. Schiefelbusch and L. Lloyd (Eds.) Language perspectives: Acquisition, retardation, and intervention. Baltimore: University Park Press, 1974.

Nelson, K. Structure and strategy in learning to talk. Monographs of the Society for Research in Child Development, 1973, 38 (1-2 whole no. 149).

Nelson, K. Concept, word, and sentence: Interrelations in acquisition and development. Psychological Review, July, 1974, 81, 267-285.

Piaget, J. The origins of intelligence in children. New York: International Universities Press, 1952.

Piaget, J. The construction of reality in the child. New York: Basic Books, 1954.

Piaget, J. Play, dreams, and imitation in childhood. New York: Norton, 1962.

Schlesinger, I. M. Production of utterances and language acquisition. In D. I. Slobin (Ed.) The ontogenesis of grammar. New York: Academic Press, 1971.

Sinclair, H. The transition from sensori-motor behavior to symbolic activity. Interchange, 1970, 1, 119-126.

Sinclair, H. Sensori-motor action patterns as a condition for the acquisition of syntax. In R. Huxley and E. Ingram (Eds.) Language Acquisition: Models and methods. London: Academic Press, 1971.

Sinclair-deZwart, H. Developmental psycholinguistics. In D. Elkind and J. Flavell (Eds.) Studies in cognitive development: Essays in honor of Jean Piaget. New York: Oxford University Press, 1969.

Sinclair-deZwart, H. Language acquisition and cognitive development. In T. E. Moore (Ed.) Cognitive development and the acquisition of language. New York: Academic Press, 1973.

Skinner, B. F. Verbal behavior. New York: Appleton-Century-Crofts, 1957.

Slobin, D. I. Cognitive prerequisities for the development of grammar. In D. I. Slobin and C. Ferguson (Eds.) Studies of child language development. New York: Holt, Rinehart, and Winston, 1973.

Staats, A. W. Behaviorism and cognitive theory in the study of language: A neo-psycholinguistics. In R. Scheifelbusch and L. Lloyd (Eds.) Language perspectives: Acquisition, retardation, and intervention. Baltimore: University Park Press, 1974.

Table 1

Categories of Semantic Intent	
Category	Examples
Nomination-existence (introducer plus referent)	this car see ball there book a baby
Agent-Action-Object Components	mommy sit get book Daddy ball
Experiencer-state (affected person, state, source)	hear train want more like cookie
Questions (Wh question)	what's that? where mommy?
Location (location of action or object)	jump chair baby bed
Possession	daddy car my baby
Recurrence	more milk push again another drink
Negation (nonexistence, rejection, denial)	milk all gone no want no mommy
Fixed and dynamic attributes	big ball pretty ball
Social-lexicon (frequently used "social" words)	hi, bye o.k. ready oh-oh

Table 2

Language Sample Analysis Chart

	Nomination-Existence	Fixed/dynamic attributes	Agent-action-object components	Experiencer-State
one-word				
two-word				
Constructions				

Table 3

Language Sample Analysis Chart

	Location	Possession	Recurrence	Negation	Questions	Social-lexicon
one-word						
two-word						
Constructions						